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CEAPRO INC. et al

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(54) Title: IMPROVED EXTRATION AND PURIFICATION METHOD FOR CEREAL BETA (1-3) BETA (1-4) GLUCAN

(57) Abstract: A novel method to extract and purify cereal ß-glucan is described. Cereal ß glucans are distinctive polymers of glucose differentiated from other polymers not only by their source but also by their physicochemical properties. The high purity of the cereal β-glucan obtained according to the present invention allows for the preparation of clear, colourless viscous liquid preparations. These liquid preparations are stable to gelling effects when kept at ambient temperatures and low ash concentrations. Compositions comprising ß (1-3) ß (1-4) glucan and a freezing point depressant are also, described.

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AMENDED CLAIMS
received by the International Bureau on 04 January 2005 (04.01.05)
original claims 1-24, replaced by amended claims 17-25 (2 pages)

+ STATEMENT

(iii) adding about 10% to about 25% (w/w) of a C_1-C_4 alcohol to the purified extract to precipitate the β(1-3) β(1-4) glucan, and

(iv) isolating the β(1-3) β(1-4) glucan.

17. A β (1-3) β (1-4) glucan composition comprising at least about 75% β (1-3) β (1-4) glucan, less than 10% ash impurities, less than 10% protein impurities, and less than 5% lipid impurities, wherein the β (1-3) β (1-4) glucan has a particle size of equal to or less than 0.2 μm.

18. The β (1-3) β (1-4) glucan composition according to claim 17, wherein the composition comprises at least about 92% β (1-3) β (1-4) glucan, less than 3.5% ash impurities, less than 3.5% protein impurities, and less than 1% lipid impurities.

19. A β (1-3) β (1-4) glucan composition prepared according to the method of any one of claims 1 to 16.

20. An aqueous composition comprising the β (1-3) β (1-4) glucan composition of claim 17, 18 or 19.

21. The aqueous composition according to claim 20, wherein the aqueous composition has a clarity of from about 5 to about 100 NTU.

22. The aqueous composition according to claim 20 or 21, further comprising from about 1% to about 40% by weight of a freezing point depressant.

23. The aqueous composition of claim 22, wherein the freezing point depressant is selected from the group consisting of glycerol, propylene glycol, butylene glycol and pentylene glycol.

24. The aqueous composition of claim 22 or 23, wherein the β (1-3) β (1-4) glucan is present in an amount of from about 1.2% to about 1.6% by weight.

25. The aqueous composition of claim 22 or 23, wherein the wherein the β (1-3) β (1-4) glucan is present in an amount of from about 1.2% to about 1.3% by weight.

Statement under Article 19(1)

Claim 17 has been amended for the sake of improved clarity, and to indicate that the β (1-3) β (1-4) glucan has a particle size of equal to or less than 0.2 μm. Support for the amendment made to claim 17 is provided throughout the specification, for example, at page 5, lines 12-28.

New claim 18 has been added to further define the glucan composition of claim 17. Support for the features recited in new claim 18 is provided, for example, at page 19, lines 14-16 of the description.

New claim 19 is directed to a β (1-3) β (1-4) glucan composition prepared according to the method of any one of claims 1 to 16.

New claims 20-21 are based on page 19, lines 20-32 of the description.

New claim 22 is based on former claims 19 and 23-24 and page 24, lines 20-22 of the description.

Claims 20-21 and 22 have been renumbered as new claims 24-25 and 23, respectively, and depend ultimately on new claim 22.

D3, D4 and D5 do not teach or suggest a composition comprising β (1-3) β (1-4) glucan having a particle size of equal to or less than 0.2 μm. As a result, claims 17-21 are novel and inventive in view of D3-D5.

Similarly, D1 and D2 do not teach or suggest an aqueous composition comprising a β (1-3) β (1-4) glucan having a particle size of equal to or less than 0.2 μm and a freezing point depressant. As a result, new claims 22-25 are novel and inventive in view of D1-D2.

Respectfully submitted,

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